

FINAL
ENVIRONMENTAL STATEMENT
FES 79 - 30

Proposed
COLORADO RIVER MANAGEMENT PLAN
GRAND CANYON NATIONAL PARK
ARIZONA

Prepared by
Grand Canyon National Park
National Park Service
Department of the Interior



Director, National Park Service

SUMMARY

() DRAFT (X) FINAL ENVIRONMENTAL STATEMENT

United States Department of the Interior, National Park Service, Western Region

1. Type of Action: (X) Administrative () Legislative

2. Brief Description of Action: A river management plan for the Colorado River between Lees Ferry and Pierce Ferry (277 miles) within Grand Canyon National Park, Mohave and Coconino Counties, Arizona. The plan proposes to phase out motorized craft; to increase total use of the river; increase noncommercial allocations; increase use of the river in the winter season; and establish measures for resource protection.

3. Summary of Environmental Impact and Adverse Environmental Effects: Elimination of motorized craft will enhance the river-running experience for most visitors; those preferring a motorized trip will be disappointed. Both private and commercial parties will receive larger use allotments. Extension of the river-running season and longer average stays in the river corridor will allow greater opportunities for interpretation and education. Scheduling and increased regulations will protect sensitive resources, but may inconvenience some users.

4. Alternatives Considered:

- a. No action
- b. Increase the visitor use levels
- c. Reduce visitor levels by 50 percent
- d. Provide exclusive periods for non-motorized use
- e. Eliminate motorized use in the Lower Gorge
- f. Allocation options

5. Comments Have Been Requested From the Following:

(See page ii for listing)

6. Date Final Statement Made Available to EPA and the Public:

Draft Statement: December 8, 1977

Final Statement: July 31, 1979

*Advisory Council on Historic Preservation
Department of Agriculture
 *Forest Service

Department of the Interior
 *Bureau of Indian Affairs
 *Bureau of Land Management
 *Bureau of Outdoor Recreation
 *Bureau of Reclamation
 *Fish and Wildlife Service
 *Geological Survey

Department of Transportation
 *Coast Guard
 *Federal Aviation Administration
*Environmental Protection Agency
*Arizona State Clearinghouse
 *Arizona State Historic Preservation Officer
 *Northern Arizona Council of Governments

Havasupai Tribal Council
*Hopi Tribal Council
*Hualapai Tribal Council
Navajo Tribal Council

*Comments received and attached

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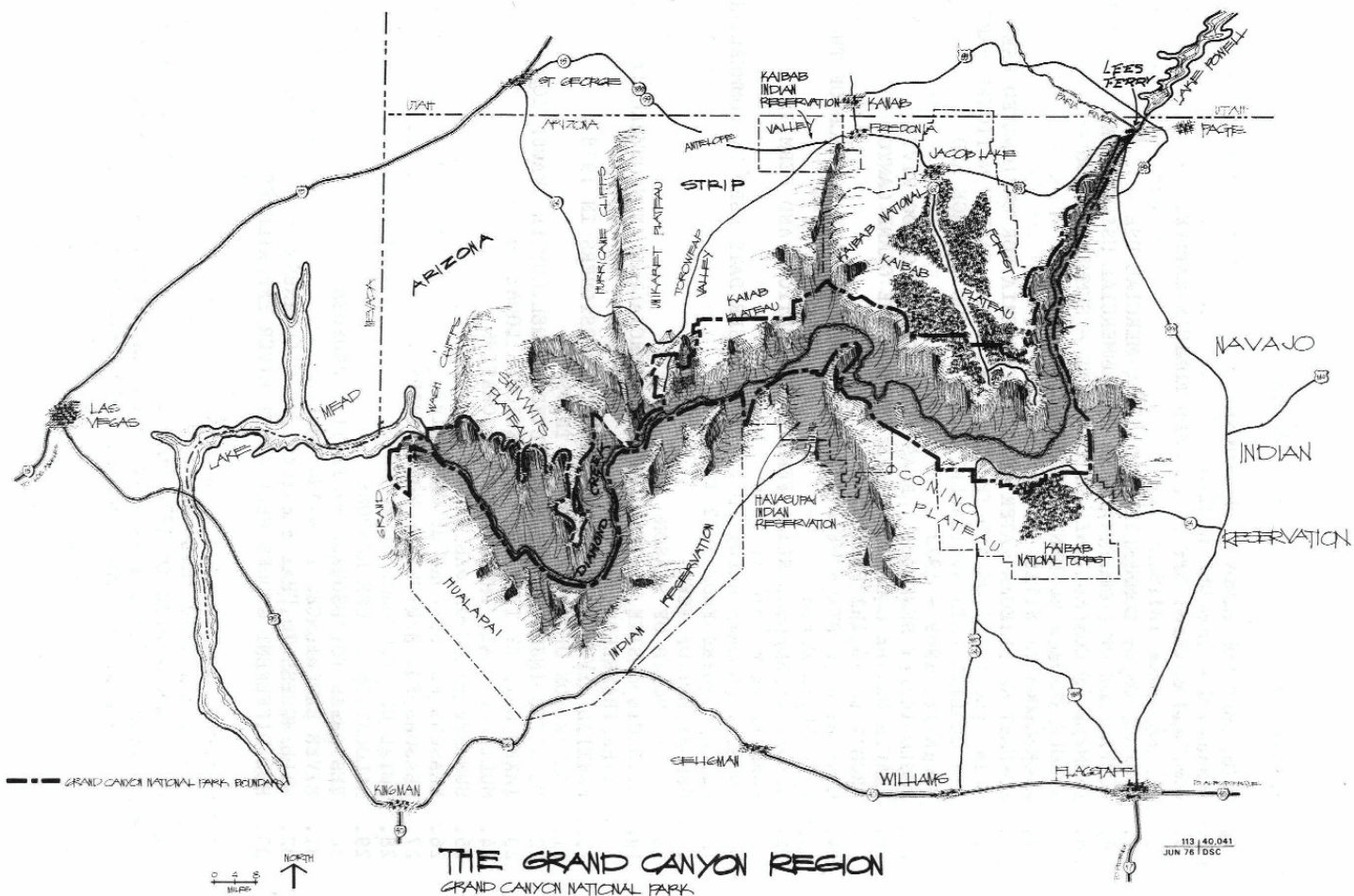
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THE GRAND CANYON REGION
GRAND CANYON NATIONAL PARK

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I. DISCRIPTION OF THE PROPOSAL

"The Colorado Plateau is a vast tableland that covers nearly one hundred fifty thousand square miles in northern Arizona and New Mexico, western Colorado, and eastern Utah. In this area is concentrated some of the outstanding scenery on the continent: the awesome Grand Canyon, the pinnacles of Bryce Canyon, the towering cliffs of Zion, Monument Valley, and Mesa Verde. The Grand Canyon of the Colorado River is located in the southwestern portion of the Colorado Plateau. The river runs 1,450 miles from Colorado to the Gulf of California including 277 miles through the Grand Canyon. A Colorado River trip through the Grand Canyon provides a unique and popular river-running experience for thousands of people each year.

Management of the Colorado River corridor and the riparian ecosystems has become an issue of major importance in recent years. The number of persons floating the river increased dramatically between 1967 and 1972 (from 2,099 to 16,432 visitors). By 1973, 22 commercial boating companies were operating on the river. As visitation increased, it became apparent that the canyon resources were deteriorating, but the degree or severity of change was unknown. To provide a firm basis for future management of the river corridor and to quantify the kind of impact inflicted on the resources, a comprehensive research program, including 29 separate studies, was initiated in 1973 and completed in June, 1976 (see Appendix A for the complete list).

The Grand Canyon National Park Master Plan contains some specific statements concerning management of the Colorado River which have had a direct influence on the development of the river plan.

". . . preservation of the Grand Canyon natural environment is the fundamental requirement for its continued use and enjoyment as an unimpaired natural area. Park management looks first to the preservation and management of the natural resources of the park. The management concept is the preservation of total environments, as contrasted with the protection of only a single feature or species.

The goals for management of the Colorado River in Grand Canyon will be to perpetuate the wilderness river-running experience and to attempt to mitigate the influences of man's manipulation of the river."

In addition, several major issues were raised by the public during hearings on the wilderness proposals for Grand Canyon National Park and during workshops held in 1976 on the future management of the river. The following major issues were identified during the course of the research studies and the public involvement process:

1. Mode of travel (motorized versus non-motorized watercraft)
2. Total use capacity
3. Allocation of use to commercial and noncommercial river runners
4. Allocation of use among commercial operators
5. Permit systems
6. Disposal of human waste
7. Use of cooking and camping fires
8. Multiple trails and site damage
9. High visitor density and congestion at attraction and camping sites
10. Lack of adequate education/interpretive programs
11. Need for research and monitoring programs

A. MANAGEMENT OBJECTIVES

In order to achieve the management goals and resolve the resource impact problems outlines above, a specific set of objectives must be established. These detailed objectives must further define what a quality wilderness experience consists of and the nature and extent of resource protection measures. These detailed objectives for river management have been developed through consideration of the management framework stated above, public input and research data provided by the 29 research projects completed in 1976.

1. -perpetuate a wilderness river-running experience in which: the natural sounds and silence of the canyon can be experienced relaxed conversation is possible the river is experienced on its own terms
2. -phase out the use of motorized watercraft between Lees Ferry and Separation Canyon.
3. -reduce high visitor density and congestion at points of interest.
4. -establish a total human use capacity and associated limitations on use of the river.
5. -allocate use equitably between commercial and noncommercial users.
6. -provide commercially guided trips.
7. -establish an equitable and efficient method of assigning noncommercial permits.
8. -protect and preserve the river corridor environment within the National Park Service's ability to do so considering the uncontrollable effects of Glen Canyon Dam.

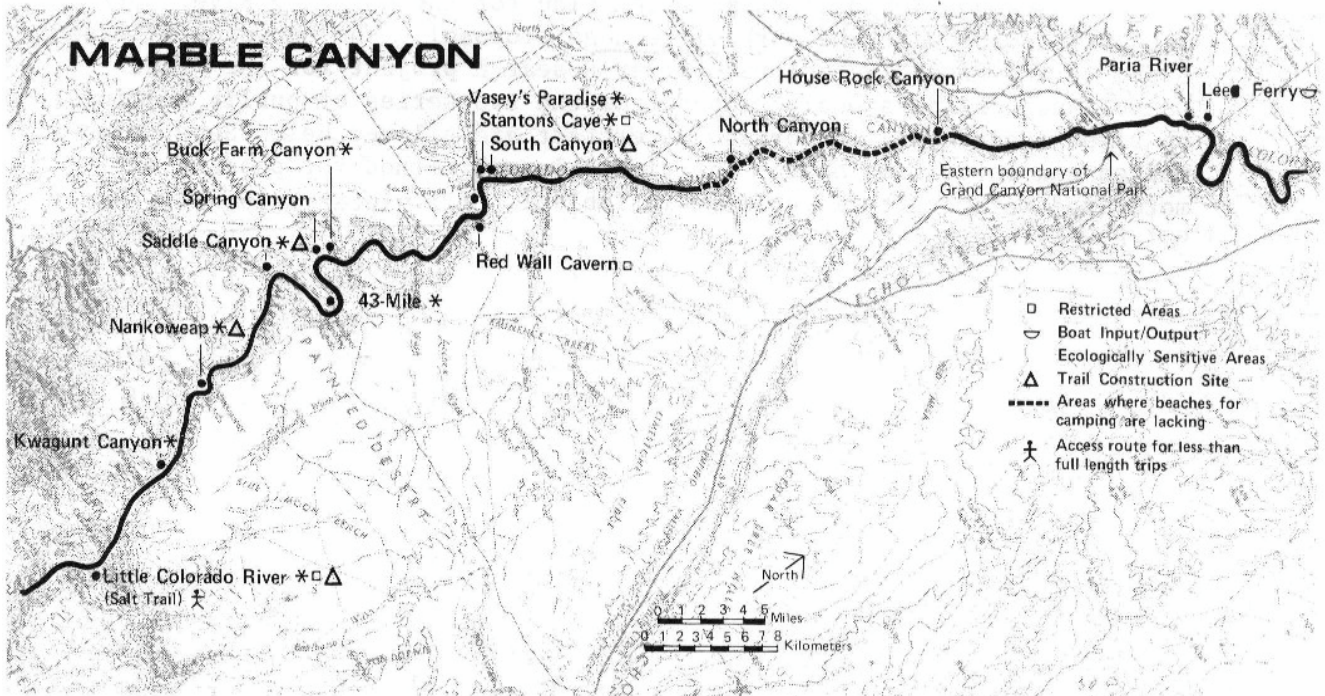
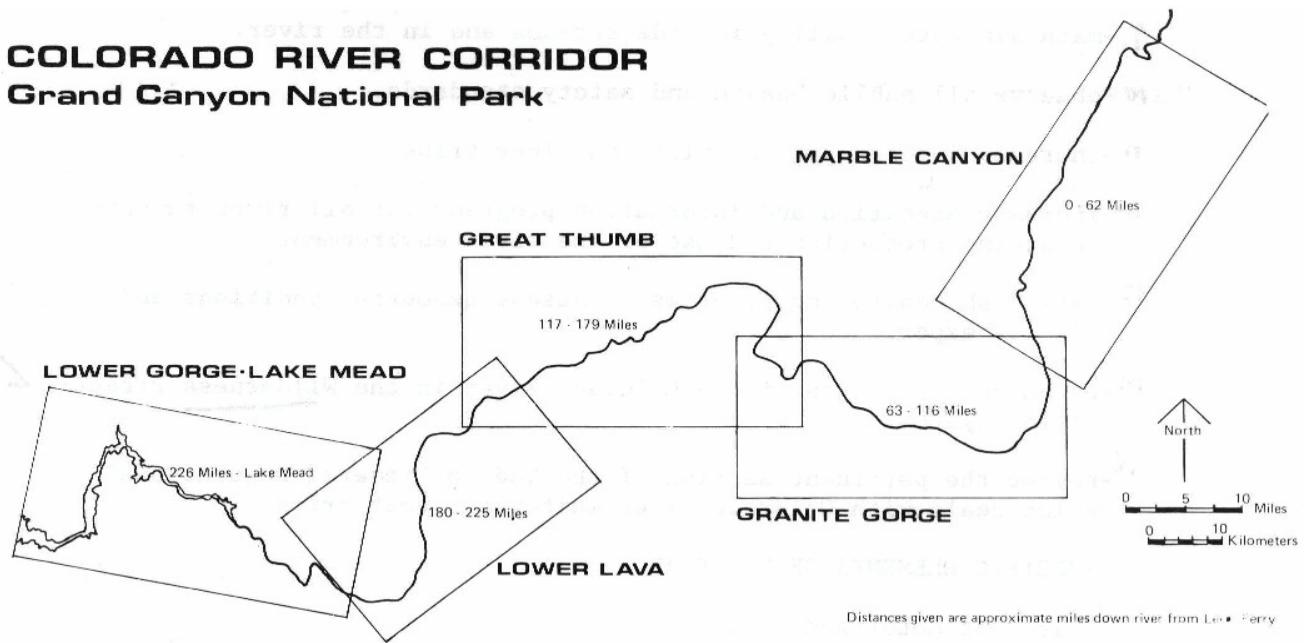
9. -maintain water quality in side streams and in the river.
10. -observe all public health and safety standards.
11. -increase interpretive services on river trips.
12. -increase education and information programs for all river runners regarding protection and use of the river environment.
13. -establish monitoring programs to assess resource conditions and visitor experiences.
14. -recommend inclusion of the Colorado River in the Wilderness Preservation System.
15. -revise the pertinent section of the Code of Federal Regulations which deals with Colorado River whitewater boat trips.

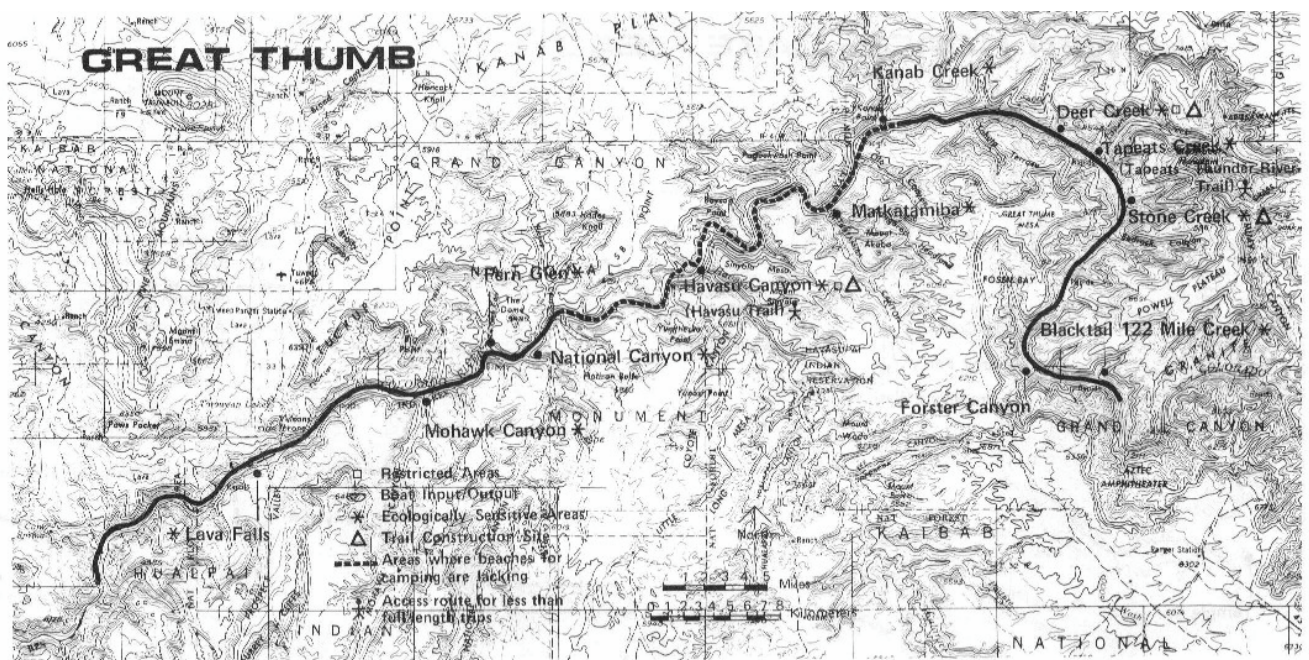
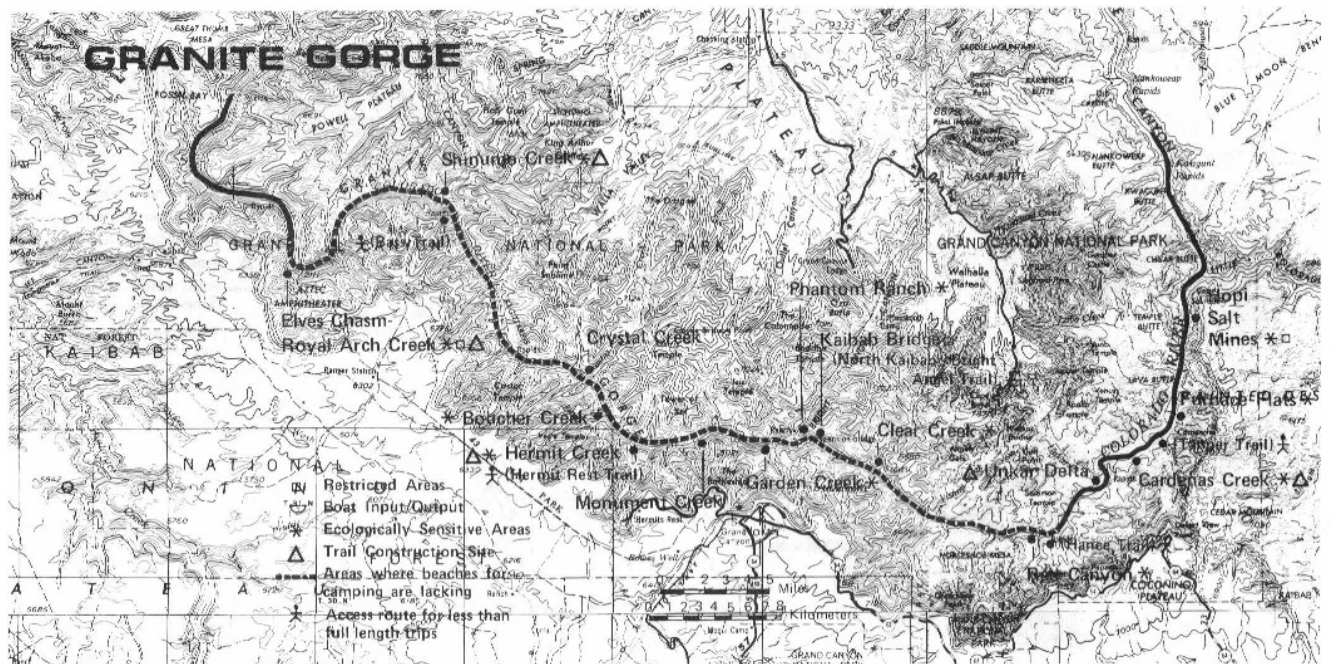
B. SPECIFIC ELEMENTS OF THE PLAN

1. Phase Out Motorized Boats

Use of motorized watercraft between Lees Ferry and Separation Canyon will be phased out over a 5-year period. This will achieve the objective of this plan to make available the high quality wilderness river-running experience which is inherently offered by the unique nature of the Colorado River through the Grand Canyon. This is also the objective of the Grand Canyon National Park Master Plan for the Colorado River Corridor, and corresponds with the park wilderness proposal. The decision is also based on the extensive Colorado River Research project for the Grand Canyon and considers public input from the two series of public meetings on river management. Motorized watercraft are allowed below Separation Canyon and on to Lake Mead. The timetable and method for phasing out motorized watercraft is outlined in Table 1. All winter trips will be oar powered

COLORADO RIVER CORRIDOR Grand Canyon National Park





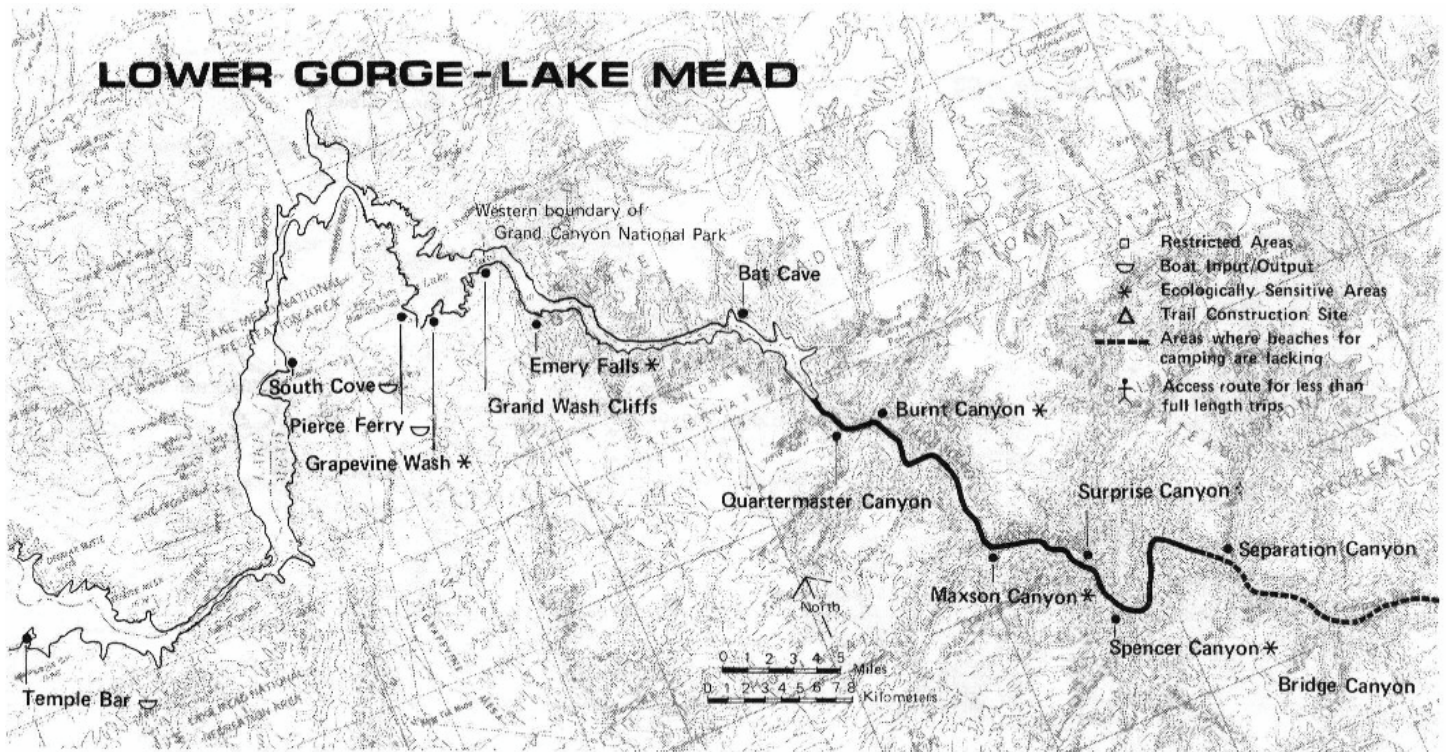
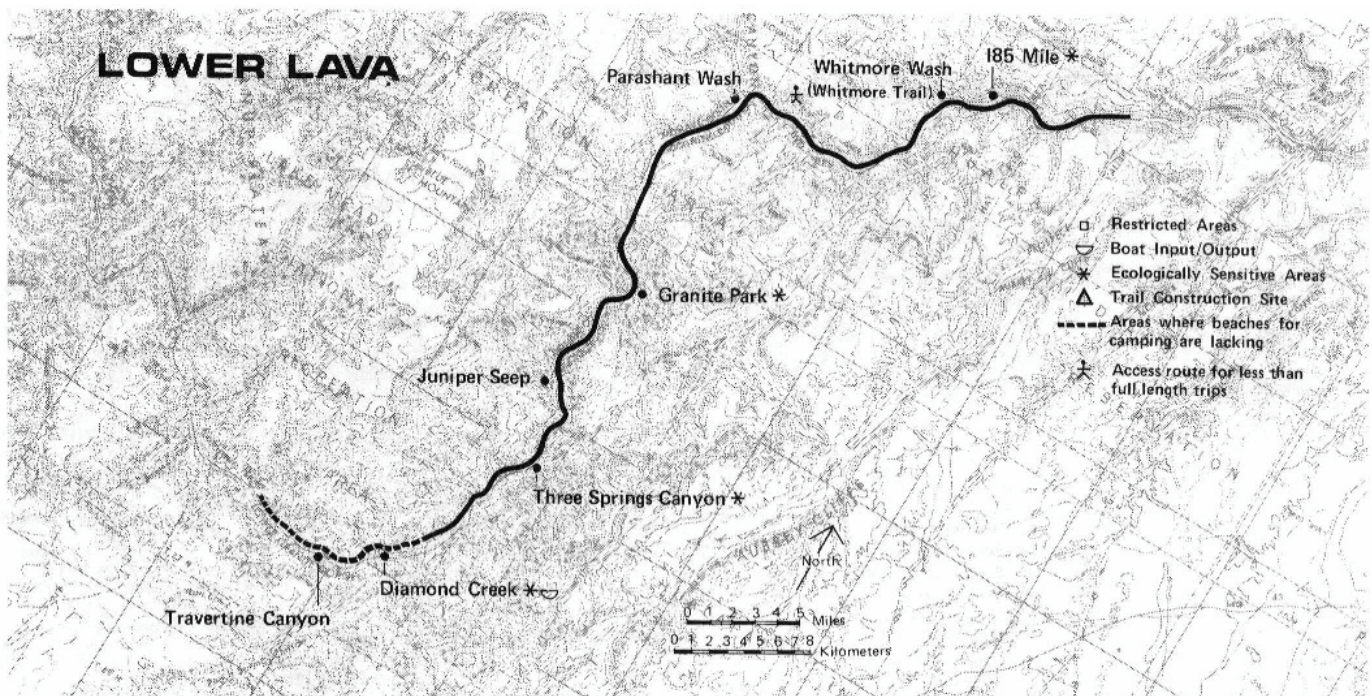


TABLE 1. TIMETABLE FOR REMOVAL OF MOTORS

	April	May	June	July	August	September
1979	Motors/ Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars
1980	Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars
1981	Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Oars
1982	Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Oars	Oars
1983	Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Oars	Oars
1984	Oars	Motors/ Oars	Motors/ Oars	Motors/ Oars	Oars	Oars
1985	Oars	Oars	Oars	Oars	Oars	Oars

2. Annual Use

Total annual use is increased both in numbers of people and user days. This is accomplished primarily by lengthening the summer season and allowing winter use.

A review of the river-runner contact research indicates that contacts, between river trips is the most important single factor leading to crowding and congestion and resulting negative impacts on the environment and trip experience. Therefore, it is essential to limit the number of groups allowed to launch. The summer season is lengthened from 4 to 6 months to allow use during times when little or no use is currently being made. Also summer use is redistributed to reduce crowding in peak midsummer months. Individual group size is important in enhancing the quality of the wilderness river-running experience. Therefore, maximum group size for commercial and noncommercial trips is established. Trip length has some bearing on trip experience as well as use levels. Minimum trip length is set to enhance trip quality and maximum trip length is set to maintain reasonable overall use levels. Average trip lengths used in this plan for commercial and noncommercial trips are estimates based on past experience and judgements as to what is likely to happen.

User days are not the key limiting factor in this plan as they have been in the past. Rather, the number of daily launches from Lees Ferry and trip size are the key factors in limits and distribution of use. A maximum annual total user day limit is established in this plan but is much higher than expected levels. Expected user day levels are based on average trip lengths.

a. Summer Season (April 1 through September 30)

In order to reduce crowding and congestion, keep related resource impacts at an acceptable level, and provide a quality river-running experience, the number of people launching is set at a fixed level of 65 per day for the summer season of 183 days. This includes two groups of 25 commercial passengers and one group of 15 noncommercial trip participants.

Total use and allocation is based on the maximum number of launches and maximum group sizes. For example, total maximum number of commercial passengers to launch from Lees Ferry for the summer season will be based on 50 passengers per day X 183 days which equals 9,150 passengers per season. However, in order to provide flexibility for concessioners to make up for cancellations and no shows, group size will be allowed to vary up to 30 passengers and the number of commercial trip launches per day may increase up to 3 on certain days.

b. Winter Season (October 1 through March 31)

Winter season use is restricted to no more than three trips and an average of 60 people per week. This will keep use at levels low enough to allow the natural cleansing of beaches to continue and provide for a wilderness river trip where the likelihood of encountering other trips is remote. It has been well documented by researchers (Carothers, et al., 1976) that heavily used beaches are significantly cleaner when visited in the spring than when last visited in the fall. However, little is known about the details of this cleansing process. Until the natural processes contributing to this cleansing are investigated, winter use will be kept at a relatively low level.

TABLE 2. CURRENT AND NEW USE LIMITS

<u>COMMERCIAL</u>	<u>1978 Limits</u>		<u>This Plan</u>	
	Summer	Winter	Summer	Winter
Average Miles Per Day	40	40	30	30
Minimum trip length (days)	6	6	8	8
Maximum trip length (days)	no limit	no limit	21	18
Average trip length (days)	9	9	12	12
Passengers per day (max)	150	150	50	50
Launches per day	no limit	no limit	1	
Launches per week	no limit	no limit	up to 3	
Passengers per group	40	40	25	25
Number of People	11,335	*	9,150	975
Number of Trips	491	*	366	39
Projected User Days	89,000	*	109,800	11,700
Maximum User Days	89,000	*	164,700	20,475
<u>NONCOMMERCIAL</u>				
Minimum trip length	no limit	no limit	no limit	no limit
Maximum trip length (days)	no limit	no limit	18	21
Average trip length (days)	19	19	16	18
Launches per day	1	1	1	1
Launches per week	**	**	7	7
Participants per group	15	15	15	15
Number of People	395	***	2,745	585
Number of Trips	37	***	183	39
Projected User Days	7,600	***	43,920	10,530
Maximum User Days	7,600	***	49,410	12,285

* The previous number of people, trips, and user days for commercial river running was allocated annually with no distinction as to season. Therefore, winter use is included in the summer use figures.

** Launches per week was limited by the number of people that could launch each day, and the annual limit.

*** The previous annual noncommercial use allocation of 7,600 user days has worked out to about 40+ trips each year. No more than 1 noncommercial trip could launch each day. Theoretically, 7 trips could launch each week. This rarely occurred because of the overriding limit of about 40 trips each year, based on the annual user day limit.

The previous number of people, trips, and user days for noncommercial river trips was allocated annually with no distinction as to season of use. Some winter use is included in the 1978 summer use figures.

It is important to understand that maximum user day levels will not be allowed to happen. In order for maximum user day levels to occur, every trip would have to be at maximum group size and trip length. It is very unlikely that this would occur within the framework of the use limits outlined in Table 2. However, additional limits will be placed in effect if use levels at any time appear to be escalating beyond an acceptable level. Acceptable level of use is that amount shown in Table 2 as the average user day level. The average user day level is based on the total number of people allowed in a given season multiplied by average trip length. The river monitoring studies will provide data to assist management in adjusting future use levels.

For the summer season, commercial use will be based on and may not exceed 9,150 passengers launching from Lees Ferry. As outlined in Table 2, the desired group size for these trips is 25 passengers. The desired number of commercial trip launches is two each day. Based on the past several years experience it is recognized that there will be last minute cancellations and no shows on many trips. To compensate for this, concessioners will be allowed flexibility in numbers of trips and group size. Each concessioner will be allowed from two to four (depending on base allocation) makeup trips or up to 30 passengers on some trips for makeup purposes. Makeup trips will be limited to no more than three each week to keep the number of launches within acceptable limits. This flexibility is provided for makeup purposes only, and concessioners may not pre-schedule such trips.

Makeup trips will not be available for noncommercial river runners in 1980. The availability of makeup trips for noncommercial use depends primarily upon the success of the information and education program to improve noncommercial trip participants' observance of regulations pertaining to the protection of the canyon. Concurrently, some experimenting with noncommercial river-trip permit processing will be necessary to determine how to handle makeups or no shows.

The number of commercial passengers allowed to launch from Lees Ferry is 9,150 during the summer season and 975 during the winter season. However, the number of individual passengers is expected to increase by approximately 3,000 through partial river trips. Concessioners are encouraged to provide partial canyon trips as they have done in the past.

Interest in partial canyon trips is high. In 1978, there were 3,997 people who took out at Lava Falls, and an additional 3,900 people who put in or took out at other locations. Of the 3,900 people, there were 3,481 who hiked in or out of the canyon in connection with their partial river trip. Section II, Table 20 shows the number of people who took partial trips with concessioners in 1978.

In addition to the noncommercial trip participants and commercial passengers outlined in Table 2, there are commercial crew members, and National Park Service patrol, administrative, and research trip personnel. The number of commercial crew on each trip varies from company to company and trip to trip depending on type of boats used and the type of trip offered. Generally, the more specialized trips require more crew. Crew members are not counted against concessioner allocations and are in addition to the 25 passengers per group. National Park Service patrol and administrative trips are not under a use limit but will normally be approximately 12 in the summer season and 6 during winter. These trips will generally be small groups of 10 or less people. There will be generally less than 10 research trips each year. Research trips are usually small groups of about 10 people. Table 3 provides information on the extent of this use and completes the total use picture.

Table 3
COMMERCIAL CREW, NPS PATROL & ADMINISTRATIVE,
AND RESEARCH TRIPS

	<u>1978</u>		<u>This Plan</u>	
	No. of People	User Days	No. Of People	User Days
Commercial Crew	2626	24,105	3,000	30,000
NPS Patrol & Admin.	100	800	180	2,500
Research	50	700	50	700

Total use including commercial passengers, commercial crew, noncommercial trip participants, National Park Service patrol, administrative, and research trips, in terms of user days based on projected trip lengths is 209,150. Total maximum use (which will not be allowed to happen based on maximum trip length and maximum group size on every trip) would be 304,070 user days.

3. Allocation of Use for Commercial and Noncommercial Trips

Commercial companies currently provide river trips for those without the expertise, time, or equipment to run the Colorado River themselves. A commercial trip, then, is defined as one where services are afforded to the visitor for a fee. These services include operating the boats, preparing meals and setting up camp, as well as providing educational opportunities to learn more about the area. These are currently both motorized and non-motorized trips. Passengers on either type of trip do not operate the boats; therefore, an oar-powered commercial trip is no more strenuous than a motorized commercial trip. Commercial river companies offer river trips only if they have a current concession permit issued by Grand Canyon National Park.

Noncommercial trips, on the other hand, consist of a private group organized to run the river and are participatory in nature. The group members share the responsibilities and cost of operating the boats, along with meals and camp duties. No fees are paid for guide services or collected above the actual cost of the trip. School and other non-profit groups may qualify for these trips (see Private Trip Affidavit, Appendix B).

The allocation between commercial and noncommercial use outlined in Table 2 is based on the best available information on the demand for commercial and noncommercial trips. figures on potential passengers turned away by commercial concessioners may count individuals more than once as they are turned away by successive companies. When certain dates are full, some companies issue brochures indication this fact. There is no way to count potential passengers turned away in this manner. Figures on the demand for noncommercial trips are complicated by duplicate applications, false applications, failure of interested but discouraged river runners to apply, etc. Concessioners reported that in 1978, they turned away approximately 12,000 people that they were unable to accommodate on river trips. By contrast, there were approximately 4,700 people who were included on noncommercial river trip permit applications that were not granted permits. While these figures are not entirely reliable, there is some indication that the errors are at least to some degree offsetting. This does provide some insight into relative demand for commercial compared to noncommercial river trips. From this comparison it appears that the relative demand by people who wanted river trips but were not able to take one was 72 percent commercial and 28 percent noncommercial. The proposed allocation based on number of people is 75 percent commercial and 25 percent noncommercial and does appear to be reasonable close to the demand based on 1978 information. This ratio will be reviewed and adjusted as more reliable information becomes available.

allocation ratio for commercial and noncommercial river running varies, depending upon whether one is considering the number of trips, number of people, or user days.

Table 4
COMPARISON OF COMMERCIAL AND NONCOMMERCIAL USE

	<u>1978</u>				<u>This Plan</u>			
	<u>Commercial</u>		<u>Noncommercial</u>		<u>Commercial</u>		<u>Noncommercial</u>	
	No.	%	No.	%	No.	%	No.	%
Participants	11,335	96.6	395	3.4	10,125	75	3,330	25
Number of Trips	491	93.0	37	7.0	405	65	222	35
Projected User Days	89,000	92.0	7,600	8.0	121,500	69	54,450	21

User day figures in Table 4 are based on projected 12-day average trip lengths for commercial and 16 days for noncommercial trips. These projected trip lengths are based on five years of actual experience in observing trip lengths. During this time, no maximum limit existed for either commercial or noncommercial trips. The minimum trip length for commercial trips was a limit of not averaging more than 40 miles per day. Maximum trip length was allowed to fluctuate at the discretion of the concessioner and noncommercial trip participants.

The plan provides for significant increases in noncommercial participants, number of trips and user days, there will be minor decreases in the number of commercial trips passengers and the number of trips but considerable increase in commercial user days. The percentage changes are outlined in Table 5.

Table 5
COMPARISON OF COMMERCIAL & NONCOMMERCIAL USE CHANGES

	<u>Participants</u>	<u>Trip Numbers</u>	<u>Projected User Days</u>
Commercial	10.7% decrease	17.5% decrease	137% increase
Noncommercial	843% increase	600% increase	718 increase

Information based on verbal and written reports indicates that noncommercial river runners are less likely to comply with operating regulations. During patrol trips in 1977 and 1978, National Park Service rangers recorded more incidents of noncompliance with regulation on the part of noncommercial river runners. Noncommercial use will be phased in to allow time to implement the information and education program for these river runners. Half of the noncommercial allocation will be allowed and monitored in 1980 and 1981. The remainder of noncommercial user days will be granted in 1982, if monitoring indicates that resource impacts are within acceptable limits by the end of the 1981 summer season.

4. Commercial Permit Management

It is essential that concessioner guided river trips be available for that segment of the public who do not have the expertise, equipment, or interest to run the river on their own. Riverrunning concession permits will be granted for a 5-year period beginning January 1, 1980, and ending December 31, 1984. When granting permits, preference will be given to those companies who have provided satisfactory service over the term of their existing permits. This is required by the Concession Policy Act of October 9, 1965 (P.L. 89-249; 79 Stat. 969; 16 U.S.C. 20):

"SECT. 5. The Secretary shall encourage continuity of operation and facilities and service by giving preference in the renewal of contracts or permits and in the negotiation of new contracts or permits to the concessioners who have performed their obligations under prior contracts or permits to the satisfaction of the Secretary. To this end, the Secretary, at any time in his discretion, may extend or renew a contract or permit, or may grant a new contract or permit to the same concessioner upon the termination or surrender before expiration of a prior contract or permit. Before doing so, however, and before granting extensions, renewals or new contracts pursuant to the last sentence of Section 4 of this Act, the Secretary shall give reasonable public notice of his intention to do so and shall consider and evaluate all proposals received as a result thereof."

As indicated in the Concession Policy Act, public notice will be given of the intention to renew permits. Anyone who so desires may submit a proposal for a permit with the assurance that it will be evaluated.

Table 6 shows the proposed method of allocating use among concessioners. This is based on historical user day allocations converted to number of passengers and trips launched.

Table 6
EXAMPLE OF CONCESSIONER ALLOCATIONS -- SUMMER SEASON

Concessioner	1978 User Day Allocations	Percent of User Days	Number of Passengers This Plan	Trip Launches This Plan
Company A	10,000	11.2%	1,025	41
Company B	8,500	9.6%	875	35
Company C	7,000	7.9%	650	26
Company D	4,000	4.5%	400	16
Company E	2,500	2.8%	250	10
Company F	1,500	1.7%	150	6
Company G	1,000	1.1%	100	4
etc.	etc.	etc.	etc.	etc.
Totals	89,000	100.0%	9,150	366

Actual river companies were not used in the example of Table 6 to avoid charges of preselection bias. "Etc." was placed at the bottom of each column to indicate that there would likely be more than seven companies. In fact, 21 companies for full-canyon trips, plus the Hualapai Tribe for Lower Gorge trips, is the maximum number that will be granted permits under this plan. Based on the past five years of operation, the National Park Service believes that from 15 to 18 companies would be preferable. This would maintain the variety of trip offerings desired and yet provide an opportunity for those existing small companies to increase their operations to the point of being more economically viable. With fewer than 15 companies, the variety of services offered would decrease significantly. However, any reduction in number of companies will occur through natural attrition.

There are 39 winter trips available to concessioners with group size of 25 passengers per trip and up to 21-day trip lengths. Each concessioner will be given the opportunity for at least one winter trip. The remaining trips will be available on a first-come, first-served basis. If there are any concessioners who do not want a winter trip, their trip will be made available to other concessioners on a first-come, first-served basis.

Scheduling of trip launch dates will be handled on a first-come, first-served basis. Concessioners will send proposed trip launch schedules for a given season to the National Park Service by July 1 of the previous year. The National Park Service will confirm launch schedules upon receipt of the proposed schedules. Any company who sends launch schedules in late will be assigned the closest launch date available to those it proposes.

If a company ceases operation, its use allocation will be reallocated at the discretion of the National Park Service. The National Park Service reserves the right to adjust or reallocate use allocation.

Concession permits will be assigned through a bid procedure, after considering the proposals submitted by all applicants. River-running concession permits cannot be transferred without prior written approval from the National Park Service.

National Park Service policy requires that all concessioners be evaluated at least three times annually. Therefore, all river-running concessioners will be routinely evaluated as required by policy. Evaluations will include on-river activities as well as compliance with permit conditions such as insurance, annual financial reports, etc. On-river evaluations will be conducted both by NPS personnel accompanying concessioner river trips and by NPS patrol personnel visiting and contacting trips on river, at attraction sites, and at camps. These contacts will be low key.

5. Noncommercial Permit Management

Noncommercial permits will be granted on a first-come, first-served basis. A waiting list will be maintained. A beginning date for receiving noncommercial permit applications will be established. It is expected that the number of applications received on the beginning date under the new plan will be more than can be accommodated during the first season. A lottery will be operated for this first block of applications. As applications are drawn, they will be granted permits until all launch dates for the first season are filled. The lottery will be continued for all initial applicants, and as they are drawn they will be placed on a waiting list for subsequent season(s). Thereafter, applications will be accepted in the River Unit Office at any time and placed first-come, first-served at the end of the waiting list.

In submitting an initial application, the applicant need not include a list of participant names. A trip participant list will be required when the applicant's name comes to the top of the waiting list and is granted a permit. If any persons on the participant list are also applicants on the waiting list, their names will be removed from the waiting list. After the trip is completed, participants may again apply for a river trip permit and be placed at the end of the list.

When a trip application comes to the top of the list, the applicants are assigned, as nearly as possible, a launch date of their choice. If they cannot meet the assigned launch date, they will have the choice of any unassigned launch dates for the remainder of the season. If there are no available dates, the permittee is placed on the top of the waiting list to be assigned the next available launch date. Cancellations will be filled by the next available person on the list until three weeks

prior to launch date. The waiting list is periodically up-dated through the mailing of interest cards. If no response is received from the interest card, the permittee's application is removed from the file. Permits and launch dates will be assigned in February for the summer season and in August for the winter season.

6. Launches from Diamond Creek

A special river-running permit is required for any noncommercial parties launching at Diamond Creek. A quota and reservation system will not be established at this time, but the permit system will make boaters aware of equipment requirements, safety procedures, and environmental considerations. It also allows the National Park Service to monitor visitor use levels. These river-running permits are issued by the River Unit or the Pierce Ferry ranger prior to a trip leaving Diamond Creek. Commercial and noncommercial river runners must meet all operational requirements for river trips as outlined in this plan. All commercial trips launching at Diamond Creek must have a current concession permit with Grand Canyon National Park.

7. Launches Between Lees Ferry and Diamond Creek

Any noncommercial river trip launching between Lees Ferry and Diamond Creek is required to obtain a permit through the system outlined in B.5. All commercial river trips launching at any point within the canyon must have a current concession permit or contract with Grand Canyon National Park.

C. ENVIRONMENTAL MAGEMENT

1. Fires

Use of fires on river trips is limited because of the environmental impacts this activity causes. Those impacts are the buildup of charcoal and ash on beaches, and stripping of native trees and shrubs for firewood due to the lack of natural driftwood.

Fires are limited to esthetic and warming purposes during the summer season. Wood must be carried into the canyon for summer fires. Driftwood from along the river may be used for winter fires. Gas stoves must be carried for most cooking purposes. Charcoal briquettes may be used for dutchovens, grilling meat, etc. All wood or charcoal must be contained in a fire pan. No fires are allowed when away from the river corridor.

The annual operating requirements contain specific details for the use of fires, fire pans, stoves, etc.

2. Human Waste Disposal

All river trips are required to haul out human waste generated by their group. This procedure is necessary due to the potential health hazard to the park visitor, impact on natural resources, esthetic impacts (sight and smell) and the potential destruction of irreplaceable archeological resources resulting from burial of waste in the canyon. National Park Service experience indicates that human waste can be removed at an acceptable cost and with little inconvenience to the visitor. The procedure is outlined in Appendix C.

3. Trash, Litter, Soap

All trash and litter must be carried out of the canyon. Use of soap is not allowed in side streams. Any soap used must be biodegradable. Specific details may be found in the 1980 Operational Requirements, Appendix D. IV.

4. Trails

Single trails are to be designated and maintained from the river to points of interest and other environmentally sensitive areas. To continue the present haphazard multiple trail system is unacceptable. Closure of existing trails and areas presently visited would not be feasible as it would require more effort to effectively patrol the closures than is reasonable. Reduction of visitor use would not accomplish desired goals since this, along with other trampling damage, is not a function of numbers of people as much as of where they walk. Establishing or designating single trails may require occasional minor amounts of construction.

A total of 12.1 miles are to be defined and maintained at the specific locations outlined in Table 7.

TABLE 7
SINGLE TRAIL ALIGNMENT LOCATIONS

Area	River Mile	Miles of New Trail	Total Miles of Trail Maintenance
South Canyon	32 (N)	0.5	1.5
Saddle Canyon	47 (N)	1.0	2.5
Nankoweap	52 (N)	1.5	2.0
Little Colorado	61.8 (S)	1.5	3.0
Cardenas Creek	72 (S)	1.0	2.0
Unkar Delta	72.5(N)	0.5	2.0
Hermit Creek	95 (S)	2.6	4.0
Shinumo Creek	108 (N)	0.5	0.5
Elves Chasm	116 (S)	0.5	0.5
Stone Creek	132 (N)	0.5	2.0
Tapeats Creek	134 (N)	0.5	3.0
Deer Creek	136 (N)	1.0	7.0
Havasupai Creek	157 (S)	<u>0.5</u>	<u>1.5</u>
		12.1	31.5

5. Historical and Archeological Resources

Specific religious Indian sites are closed to hiking and/or camping. These sites are identified in the operating requirements, Appendix D. No archeological or historic site may be disturbed. No artifact may be removed from the canyon.

The archeological sites listed in Table 8 are subject to heavy visitation and will be monitored, evaluated, stabilized, and protected as necessary to preserve their values in compliance with mandates of the National Historic Preservation Act and following consultation with the Advisory Council on Historic Preservation.

TABLE 8
ARCHEOLOGICAL SITES

Site Number	Type of Site	Work Needed
1. C:5:1	Pueblo Ruins	Stabilization
2. C:5:3	Stanton's Cave*	Repair Fence
3. C:9:1	Pueblo Ruins	Stabilization
4. C:13:4	Prehistoric Midden*	Test Excavation
5. C:13:66	Rock Shelter*	Full Excavation
6. C:13:2	Pueblo Ruins	Stabilization
7. C:13:10	Pueblo Ruins*	Test Excavations
8. C:13:11	Masonry Granary	Stabilization
9. B:16:3	Pueblo Ruins	Stabilization
10. B:15:1	Pueblo Ruins	Stabilization
11. B:10:4	Pueblo Ruins	Stabilization
12. B:10:1	Pueblo Ruins	Stabilization
13. A:16:1	Pictographs*	Test Excavations
14. G:3:3	Rock Shelter*	Test Excavations

* Regular inspection of sites with research potential may show that active preservation or data recovery measures (stabilization or emergency excavation) may be necessary.

The following historic sites will be preserved through evaluation, protection and/or stabilization:

Name of Site

1. Brown Inscription
2. Cave Springs Rapid Historic Site
3. Bert Loper's Boat
4. Grave's of Peter Hansbrough (1889) and Boy Scout (1946)
5. Grave of Willie Taylor
6. Beamer's Cabin
7. Tanner Mining Camp
8. Hance Cabin
9. Asbestos Canyon Mining Camp
10. Bass' Winter Camp and Cable Crossing
11. Hakatai Canyon Mining Camp

6. Monitoring and Continued Research

Data from research projects completed in 1976 has been used in evaluating impacts of current visitor use levels and patterns, and in developing the management plan. It is recognized that much additional data is needed. Continued effort will be required in the following areas.

a. Sociological

Further refinement of information regarding relative demand by the public for noncommercial and commercial trips is essential. Existing data has provided groundwork for setting initial allocations. However, a more reliable process is needed to accurately assess the demand for commercially guided trips, taking into account the number of turn-downs and cancellations, and the effect of advertising activities.

Analysis of noncommercial permit demand is needed to determine duplicate applications, false names, and number of people that do not apply due to the tremendous competition for permits. The data can then be compared and a more responsive allocation made.

It must be recognized that demand for commercial vs. noncommercial trips is not static. Continual monitoring and adjustments in allocations will be required.

Monitoring of contacts and crowding under the new management scheme is essential. Also important is continued assessment of visitor perception of the trip experience.

b. Biological

There is need for further data and the monitoring of ecological changes to ensure that the resource is being protected and to assess the effects of changing use patterns.

The environmental health of campsites and points of interest must be monitored. The data gathered will be used to adjust visitor use levels to mitigate longer term resource impacts.

c. Other

Monitoring of economic impacts on concessioners and visitors resulting from the restrictions, limitations, and requirements established by the plan is also necessary.

To comply with Executive Order 11593, it is imperative to evaluate cultural and historic resources within the river corridor and related use areas that are or may be affected by river travelers, and to monitor impacts on these resources resulting from river runners. Protective measures will be taken as required.

D. GENERAL GUIDELINES

1. Plan Review and Revision

It is expected that periodic modifications to the plan will be necessary. Future modifications will be based on data and information from monitoring studies and public input. Normally, specific detailed requirements concerning boat types, boat capacities, safety and emergency equipment, safety and emergency procedures, trip leader and guide standards, resource protection procedures, public health standards, etc., will be reviewed and modified where needed on an annual basis. Use, allocation, scheduling, and related matters will normally be modified on a longer term basis of from three to five years. However, in any situation where a critical need for modification arises, the Superintendent reserves the right to make such a modification whenever it is necessary.

The procedure for modification will include:

- Conducting research and evaluating data.
- Determining alternate management directions.
- Considering public review and comment.
- Notifying all river-running permit holders of proposed changes
- Notifying the general public through local and/or Federal Register publication.

2. Education of Commercial Guides, Noncommercial Trip Leaders and Visitors.

It is essential that commercial guides, trip leaders, and passengers are fully educated as to river management requirements. The educational provisions are listed below:

- Annual written operating requirements for every guide and trip leader.
- An audio-visual program on resource protection for all commercial and noncommercial river passengers.
- Commercial guide and trip leader training programs in minimum impact behavior, safety, sanitation and interpretation. A minimum of two 1-week commercial boatman training sessions per year will be planned, providing funds and manpower are available to the National Park Service. Commercial guides and trip leaders should attend at least one of the 1-week sessions during the first year of employment. Alternate methods and sources of training guides may be arranged by concessioners. Ability, knowledge, and willingness to impart information gained through training or other sources to passengers will be noted on concessioner evaluations. All noncommercial trip leaders must attend a one-day training session at Lees Ferry.

Commercial guides and noncommercial trip leaders must ensure that members of their group follow all applicable National Park Service rules, regulations and guidelines.

3. Boating and Safety Requirements

Based on past experience, current boating and safety requirements have been found to be adequate and will be continued. A summary of those standards are outlined below and a complete description found in Appendix

There are specific types of watercraft and corresponding load capacities (numbers of people) that are allowed to run the river. Exception to the rules outlined in the annual operating requirements must be approved by the National Park Service.

Wearing of U.S. Coast Guard approved life jackets in all whitewater areas of the river is required. Continued wearing of life jackets in calm water sections of the river is highly recommended. However, flexibility is allowed to the concessioner and noncommercial river runner to allow life jackets to be taken off on flat water, depending on the type of watercraft and other conditions. Types of life jackets and other floatation devices to be worn or used by commercial passengers, boatmen, and noncommercial river runners are described in Appendix D.

All river trips are required to carry first aid supplies and equipment. Recommended supplies and equipment are found in the Appendix. In the event of an emergency medical or other situation arising on the river all trips are required to carry some emergency communications and signaling equipment. Other emergency repair and spare parts are required on all trips, such as extra oars or paddles, boat patching kits, pumps, ropes and maps.

4. Guide and Trip Leader Standards

Standards for commercial trip leaders and guides have been established. These include sufficient previous experience on whitewater rivers, including the Colorado in Grand Canyon, to ensure that a person has the skill to successfully negotiate the rapids, as well as to provide information and interpretation for the visitor. In addition, the guide must be able to: meet and cope with first aid situations and emergency evacuation procedures, deal with boat maintenance and repair, and be especially knowledgeable and actively work to protect the canyon's resources. A commercial trip leader must have had at least six trips through the canyon (as a guide) in the type of craft being used. A guide must have had three trips through the canyon in the type of craft to be run, having run all rapids in the river in this craft at least twice.

Standards for noncommercial trip leaders are less stringent regarding previous experience on the river in Grand Canyon, but it is essential that they attend a one-day training session to learn the proper procedures regarding resource protection, safety and emergency evacuation, as well as some interpretation (see Appendix D. III. for details).

5. Special Transportation Regulations

a. Helicopters

Helicopters used to transport passengers to and from the river must operate on lands outside the boundaries of Grand Canyon National Park. Commercial river-running companies will be required to schedule passenger exchanges at designated times and places specified by the National Park Service. These flights will be coordinated with commercial outfitters and those in control of the lands being used.

b. Mules and Horses

The park will arrange for a concessioner to provide mule takeouts at two points in the canyon. These areas will be Whitmore Wash and Phantom Ranch. This will be done through the existing or a new mule concession permit. These concessioners will provide transportation for passengers and baggage to and from river trips.

River concessioners must make arrangements with mule concessioners. Up to 10 mules a day will be available, by prior arrangement, for river passengers at Phantom Ranch. Up to 30 mules or horses will be available, by prior arrangement, at Whitmore Wash.

c. Hiking

Visitors may hike in or out of the canyon to meet or leave a river trip. However, overnight hiking trips require a permit obtainable from the Backcountry Reservations Office through the River Unit Manager.

6. Health and Sanitation

The proper storage and handling of food on river trips is important so as to minimize the spread of communicable disease. Personal cleanliness of food handlers, proper type and temperature of storage boxes, cleanliness of cooking equipment, and washing dishes properly are some of the most important items. Further details are found in Appendix C.

Applicable Federal, State and local government laws and regulations will govern health and sanitation procedures on all river trips.

E. INTERRELATIONSHIP WITH OTHER PLANS AND PROPOSALS

1. National Park Service

The final environmental statement for the Grand Canyon Master Plan (FES 75-97) was made available for public review in November 1975. The final master plan was approved in June 1976. The plan provides a framework for the development and management of visitor facilities on the rims and the use of the backcountry and river corridor. The river management plan has been prepared in conjunction with the master plan and takes into consideration visitor use within the transcanyon corridor (Phantom Ranch) and that of the backcountry adjacent to the river.

Certain lands within Grand Canyon National Park have been studied and evaluated for incorporation in the National Wilderness Preservation System. The proposed Wilderness Classification for Grand Canyon, Draft Environmental Statement (DES 76-28) recommends that the river corridor be placed in wilderness at such time as the lands so qualify. The total area of the river unit, including the water surface, would be approximately 17,000 acres. Existing use of motorized craft is inconsistent with the wilderness criteria of providing outstanding opportunities for solitude and for a primitive and unconfined type of recreation.

The backcountry management plan is the river management plan's counterpart in the management of the park's roadless area. The river plan is designed to be a workable document compatible with the standards, requirements, and limits for use established in the backcountry management plan.

A natural resource management plan has been developed for Grand Canyon. This plan is complementary and considers portions of the river environment as well as the rest of the park lands. The plan contains research proposals coinciding with river management actions pertaining to endangered fish species and exotic plant removal.

A cultural resource management plan is being prepared for the protection of all historic and archeological resources within the park. This plan will detail those specific sites within the river corridor needing stabilization and/or preservation and will describe how those particular activities will be accomplished.

A study of aircraft overflights and the related problem of noise is currently in progress. The results of this study will be incorporated into a proposed draft management plan and the submission of proposed rules to the Federal Aviation Administration to mitigate resulting impacts on park visitors and resources.

As a result of the 1972 Water Pollution Control Act (Public Law 92-500), a water quality inventory and biological analysis plan has been written and approved for all Grand Canyon National Park waters. This plan

provides for continued monitoring of the condition of significant water sources within the park.

A combined burro management plan and draft environmental statement was released to the public in January 1979. The plan evaluates the effects of burro populations on natural and cultural resources along the river corridor and proposes measures to control burro numbers and reduce adverse impacts. The final plan is scheduled for completion in the fall of 1979.

The park's Search and Rescue Plan provides procedures for the emergency search and rescue of park visitors including river runners.

A general management plan and wilderness proposal have been prepared for Glen Canyon National Recreation Area. The river management plan will affect operations within the national recreation area at Lees Ferry. Glen Canyon personnel will undertake added responsibilities due to the expanded education/interpretive programs proposed in the plan. These programs and personnel will be provided by the national recreation area.

A revised wilderness proposal for Lake Mead National Recreation Area has recently been made available for public review, DES 79-12. Although lands immediately adjacent to Grand Canyon, such as the Shiviwits Plateau and those in the Whitmore Canyon area are considered for wilderness, such designation would not affect river-running activities. Visitors do leave the float trips at Whitmore Canyon and travel through national recreation lands via a jeep road, but this access road would remain open to permit other uses such as grazing.

2. Havasupai Reservation

A study of the traditional use lands, consisting of 95,335 acres within the national park boundary is currently being headed by the Bureau of Indian Affairs, together with the Havasupai Tribe and the National Park Service. The study will determine what traditional uses were made of the area below Great Thumb on the south slope of the Grand Canyon to the high water line of the river. These lands are within Grand Canyon National Park and are managed by the National Park Service, but are also available for traditional uses of the Havasupai. Of primary importance is the coordination of off-river hiking in Havasu Creek.

3. Bureau of Reclamation

The Bureau of Reclamation has prepared an environmental assessment for the operation of Glen Canyon Dam. The amount of water released from the dam affects the river-running activities in Grand Canyon, as well as the natural resources along the river corridor. The volume of water released at any given time will depend upon water and power demands in the region. Coordination has been established between the Bureau of Reclamation and National Park Service personnel to obtain water flow predictions.

